Recontextualizing Anthropomorphic Metaphors in Organization Studies: The Pathology of Organizational Insomnia

Schoeneborn, Dennis ; Blaschke, Steffen ; Kaufmann, Ina Maria

Abstract: In this article, the authors discuss critically the use of "anthropomorphic" metaphors in organization studies (e.g., organizational knowledge, learning, and memory). They argue that, although these metaphors are potentially powerful, because of frequent usage they are at risk of becoming taken for granted and contextually disconnected from their source domain, the human mind. To unleash the heuristic potential of such metaphors, it is necessary to take into account the inherent dynamics and bidirectionality of metaphorical language use. Therefore, the authors propose a methodology for the context-sensitive use of metaphors in organization studies. They illustrate this approach by developing the new metaphor of organizational insomnia, which is informed by recent neuroscientific research on human sleep and its disruptions. The insomnia metaphor provides an alternative way of explaining deficits in organizational knowledge, learning, and memory, which originate in a state of permanent restlessness.

DOI: https://doi.org/10.1177/1056492612448463

Recontextualizing Anthropomorphic Metaphors in Organization Studies:

The Pathology of Organizational Insomnia

This is a prefinal manuscript. The final and edited version has been published as: Schoeneborn, D., Blaschke, S. & Kaufmann, I. M. (2013). Recontextualizing anthropomorphic metaphors in organization studies: The pathology of organizational insomnia. *Journal of Management Inquiry*, 22(4), 435-450.

Authors' Contact Details

Dr Dennis Schoeneborn
University of Zurich
Department of Business Administration
Universitaetstr. 84
CH-8006 Zurich / Switzerland
dennis.schoeneborn@uzh.ch

Dr Steffen Blaschke
University of Hamburg
Chair of Organization and Management
Von-Melle-Park 5
D-20146 Hamburg / Germany
steffen.blaschke@wiso.uni-hamburg.de

Ina Maria Kaufmann
University of Zurich
URPP Ethics
Universitaetstr. 84
CH-8006 Zurich / Switzerland
kaufmann@ethik.uzh.ch

Acknowledgements
We thank Joep Cornelissen, Patrick Haack, Timothy R. Kuhn, Emilio Marti, Bill McKinley, and Jost Sieweke for fruitful comments on earlier versions of this paper. Furthermore, we owe our gratitude to editor Marvin Washington as well as the two anonymous reviewers for their guidance and advice. This research also benefitted from the first two authors' involvement in the Scientific Network 'Organization as Communication' (www.orgcom.org), funded by the German Research Foundation (DFG; grant no. BL 1149/1-1).

Recontextualizing Anthropomorphic Metaphors in Organization Studies: The Pathology of Organizational Insomnia

Abstract

In this paper, we discuss critically the use of "anthropomorphic" metaphors in organization studies (e.g., organizational knowledge, learning, and memory). We argue that, although these metaphors are potentially powerful, because of frequent usage they are at risk of becoming taken for granted and contextually disconnected from their source domain, the human mind. In order to unleash the heuristic potential of such metaphors, it is necessary to take into account the inherent dynamics and bidirectionality of metaphorical language use. Therefore, we propose a methodology for the context-sensitive use of metaphors in organization studies. We illustrate this approach by developing the new metaphor of *organizational insomnia*, which is informed by recent neuroscientific research on human sleep and its disruptions. The insomnia metaphor provides an alternative way of explaining deficits in organizational knowledge, learning, and memory, which originate in a state of permanent restlessness.

Keywords

Organization theory, organizational communication, metaphor, sleep, insomnia

Introduction

Using metaphors to comprehend organizations has a long-standing tradition in organization studies (e.g., Morgan, 1980, 1986; Tsoukas, 1991, 1993; Weick, 1989). A number of works (e.g., Cornelissen, 2005; Cornelissen & Kafouros, 2008; Spender, 1996) provide rich evidence for the pervasiveness of metaphors in this research field: one empirical example is Anderson and Sun's (2010) citation analysis that showed the wide dissemination of the organizational memory metaphor, as originally introduced by Walsh and Ungson (1991). Generally speaking, through metaphors it is possible to describe organizational characteristics and functions in the terminology of another conceptual domain. However, recent research points out that the heuristic value of metaphors is fragile and needs to be continuously maintained (Cornelissen, 2005; 2006a; Cornelissen, Kafouros & Lock, 2005).

Consequently, Cornelissen and his colleagues (2005) call for further methodological advancements in the application of metaphors. In a similar vein, Cornelissen (2004) argues that that the use of metaphors in organization studies is "not trivial, lest unconditional. It depends whether metaphors have (or have not) a heuristic value for organizational theorizing; their use therefore needs to be an informed, disciplined, and guided process instead of being based on an 'anything goes' maxim" (p. 706). Cornelissen (2004, p. 718) introduces two criteria, on the basis of which a metaphor can be assessed with respect to (1) its *aptness*, that is, "whether a metaphor 'fits' and is at least meaningful", and (2) its *heuristic value*, that is, the extent to which a metaphor offers new insights into an unfamiliar domain. The latter criterion correlates with the distance between the domains that the conjoined concepts refer to.

He illustrates these two evaluative criteria by the metaphor of "organization as theater" (Cornelissen, 2004, p. 719), which receives a fairly high score of aptness but lacks heuristic value. This is because the metaphor does not make full use of the *power of dissimilarity*, where, the greater the contextual distance between two domains, the better the

prospects of the metaphor being insightful (Cornelissen, 2004, p. 718). Hence, metaphors invite us "to see similarities and differences between two concepts, and to see the one concept in terms of the other, making its meaning inherently more profound and exotic than a rendering of the pre-existing similarities between the conjoined concepts might suggest" (Cornelissen, 2005, p. 755; emphasis in original). As Oswick and colleagues put it: "By rendering the familiar strange, anomaly encourages us to think about taken-for-granted phenomena in new, unusual, and unconventional ways" (Oswick, Keenoy & Grant, 2002, p. 301). In other words, metaphors gain their heuristic value primarily from the differences between domains—that is, from the fact that they represent imperfect comparisons—rather than from their similarities. However, the heuristic potential of metaphors can only be unleashed if metaphors also fulfill the second crucial criterion of aptness.

Some of the most important and most frequently used metaphors in organization studies are *anthropomorphic metaphors*, i.e., which typically transfer features from the source domain of the human mind to the target domain of the organization. Among the most prominent examples are organizational knowledge, learning, and memory (Spender, 1996). In this paper, we argue that the heuristic value of these and other anthropomorphic metaphors is contingent upon two parameters: first, metaphors must account for the dynamics inherent in the use of metaphorical language (Wee, 2005, p. 367). Second, they must maintain a strong and active connection to their source domain, the human mind, in order to avoid losing their heuristic value by becoming too taken-for-granted (Cornelissen & Kafouros, 2008). By drawing on metaphor theory and the concept of *recontextualization* (Linell, 1998; Wee, 2005), we propose a three-step methodology to the context-sensitive use of metaphors in organization studies: (1) contextual exploration of the source domain in the light of the target domain, (2) recontextualization of the target domain in the light of the source domain, and (3) evaluation of the aptness and heuristic value of the context-sensitive metaphorical transfer.

To illustrate our approach, we introduce the new metaphor of *organizational insomnia*, which describes the inability of some organizations to "fall asleep" (metaphorically speaking), i.e. to withdraw from their environment on a regular, rhythmical basis. This metaphor was chosen because of the importance of sleep for the human mind's abilities of knowledge, learning, and memory, as recent studies in neuroscience have shown (e.g., Gais & Born, 2004; Hobson & Pace-Schott, 2002; Krueger et al., 2008). We argue that in the era of "social acceleration" (i.e., the contemporary self-reinforcing process of increasingly rapid technological and social change; Rosa & Scheuermann, 2009), similarly to the human mind, organizations require being able to switch to a mode of "sleep," that is, when organizational processes regularly come to a rest. Consequently, the insomnia metaphor provides an alternative explanation of deficits in organizational knowledge, learning, and memory that can originate in a state of permanent restlessness on the organizational level (i.e., processes, routines, etc.). It also underpins our main argument that a metaphor, which is able to establish a strong and active link between the source and the target domains (in this case, the human mind and the organization respectively), can help organizational scholars recontextualize related metaphors (in this case, organizational knowledge, learning, and memory).

The contribution of our paper is threefold: first, our methodological proposal for the context-sensitive use of metaphors directly responds to recent calls for further advancements in the application of metaphors in organization studies (e.g., Cornelissen, 2004, 2005, 2006a; Cornelissen et al., 2005; Oswick et al., 2002). Second, we introduce the new metaphor of *organizational insomnia*, which helps recontextualize *deficits* in organizational knowledge, learning, and memory (Spender, 1996) as the result of an organization's "lack of sleep" (i.e., a state of permanent restlessness). Third, by connecting metaphorically the source domain of the human mind and the target domain of the organization we further explore the trans-disciplinary link between organization studies and neuroscience (cf. Senior & Butler, 2007).

Methodological Approaches to Metaphor Creation in Organization Studies

The use of metaphors is widespread in organization studies (Morgan, 1980). As Tsoukas explains (1991, p. 566), metaphors generally involve "the transfer of information from a relatively familiar domain (variously referred to as *source* or *base* domain, or *vehicle*) to a new and relatively unknown domain (usually referred to as *target* domain or *topic*)." Most frequently, organization scholars apply *anthropomorphic metaphors*, which ascribe human characteristics to the organizational entity (Andersen, 2008). These metaphors make it possible to describe organizational characteristics and functions that were previously hard to grasp. For instance, the vast literature on organizational knowledge, learning, and memory (e.g., Dodgson, 1993; Miner & Mezias, 1996; Spender, 1996; Walsh & Ungson, 1991) is grounded in the assumption that knowledge, learning, and memory emerge on the level of organizational processes and are not simply the sum of the cognitive capabilities of individual organizational members. In other words, the organization *per se* knows, learns, and is able to memorize by advancing the very processes that constitute its existence (Spender, 1996).

Vertical vs. Horizontal Interconnectedness of Metaphors

The body of literature that reflects critically on the use of metaphors in the field of organization studies has grown significantly in the last decade (e.g., Cornelissen, 2004, 2005, 2006a, 2006b; Cornelissen et al., 2005, 2008; Cornelissen & Kafouros, 2008; Oswick et al., 2002). Many of those studies offer helpful insights. For instance, Cornelissen and Kafouros (2008) highlight the fundamental *interconnectedness* of metaphors: *complex metaphors* are typically composed of several *primary metaphors*: e.g., the complex metaphor of the organization as a collective mind (Weick & Roberts, 1993) encompasses the primary metaphors of organizational knowledge, learning, and memory (Spender, 1996). In other words, primary metaphors tend to form complex conceptual networks, in which the meanings of all interconnected metaphors evolve interdependently.

The interdependence of primary metaphors is an important source for "metaphorical imagination", which, as Cornelissen and Kafouros argue (2008, p. 963), "is a creative and dynamic process that allows scholars to combine primary metaphors in novel ways, to imagine new and more complex and elaborate metaphorical structures, and to branch off into different directions." On that basis, we can distinguish two dimensions of the embeddedness of metaphors: in the *vertical* direction, metaphors conceptually connect the source and target domain, whereas in the *horizontal* direction, they are connected to other concepts, with which they collectively form a complex metaphor or metaphorical domain. Figure 1 illustrates this double interdependence of metaphors. Solid lines designate the well-established domains of the human mind and the organization; dashed lines indicate that the new metaphorical domain has permeable boundaries and allows for dynamic cross-references across domains.

Insert Figure 1 About Here

"Alive" vs. "Dead" Metaphors

The anthropomorphic metaphors of organizational knowledge, learning, and memory have undeniably advanced our understanding of organizations as complex systems, as numerous examples in the literature attest (e.g., Schneider & Angelmar, 1993; Weick & Roberts, 1993). As a whole, these metaphors portray organizational processes or routines as important carriers of knowledge (Tsoukas & Vladimirou, 2001). What is more, these metaphors form a solid basis for other concepts, such as the resource-based view of dynamic capabilities (e.g., Lichtenthaler, 2009).

However, the early enthusiasm for anthropomorphic metaphors in the 1980s and 1990s was followed by considerable criticism in the last decade. For instance, Baumard and

Starbuck (2005) provide empirical evidence that organizations tend not to learn from past failures but, on the contrary, to repeat them. In a similar vein, de Holan and Phillips (2004), as well as Easterby-Smith and Lyles (2011), discuss the inability of organizations to retain new knowledge and their inherent tendency to forget rather than to commit to memory. Moreover, critics argue that the notion of organizational knowledge has become reified and is strongly imbued with the terminology used in information technology to refer to "knowledge management," but is insufficiently embedded in actual organizational practices (e.g., Currie & Kerrin, 2004). Furthermore, because anthropomorphic metaphors tend to "humanize" the organization, scholars are often quick to draw cross-references between the source domain (human mind) and the target domain (organization) without checking systematically for the aptness and heuristic value of these metaphors (see Cornelissen, 2004).

Such criticism is reflected in another distinction that Cornelissen and Kafouros (2008) draw between "dead" and "alive" metaphors. Metaphors are figuratively "dead" if they become taken for granted: "Importantly, because of its emergent meaning, a metaphor may become conventionalized, or 'dead' for lack of a better word, […] but deadness does not eliminate the metaphorical element" (McCloskey, 1983, p. 506). Accordingly, the frequent use of anthropomorphic metaphors in organization studies increases the risk that they become decontextualized from their source domain, the human mind. Put differently, it is their very success which can become the source of their decline in heuristic value. Figure 2 illustrates the figurative "death" of a metaphorical domain. In contrast to Figure 1, the metaphorical domain is now well established (solid lines), but its connection to the source domain is eroding (dashed lines) because the metaphorical concepts are becoming too taken-for-granted to evoke the source domain.

Insert Figure 2 About Here

Such a disconnection and decontextualization can also originate in and be fostered by the dynamic development of each (linguistic) domain. Indeed, a metaphor may be simply "lose track" as the source domain develops. "Alive" metaphors, on the contrary, are able to maintain the dynamic link between the source and the target domains and allow for creative contextual cross-references: "When two terms are combined metaphorically for the first time, an individual must seek to understand the presuppositions embedded in the extralinguistic context that helps to establish a meaning" (Cornelissen & Kafouros, 2008, p. 959). Describing metaphors as "alive" implies, for instance, that they remain sensitive to ongoing changes in meanings in the source domain (e.g., new scientific insights into the human mind's ability to know, learn, and remember). However, metaphors may follow a "natural lifecycle." As they become more established and more frequently used, their potential to "surprise" and to promote novel ways of thinking declines. Hence, we may ask whether and how metaphors can be kept actively "vivid" and "alive"?

Methodological Proposal: Embracing the Dynamics of Recontextualization

Cornelissen and his colleagues (2005) call for further methodological advancements in the application of metaphors in organization studies. In this paper, we directly respond to their call. In particular, we propose a methodology for the context-sensitive use of metaphors that—in an ideal case—may revive neighboring metaphors, which are in a late stage of their "lifecycle." For this purpose, we draw on studies on metaphors in general and the concept of *recontextualization* in particular (Linell, 1998; Wee, 2005). Linell (1998, pp. 144–145) defines recontextualization as "the dynamic transfer-and-transformation of something from one discourse […] to another. Recontextualization involves the extrication of some part or aspect from a text or discourse […] and the fitting of this part or aspect into another context, i.e., another text or discourse"; this "something" refers to "actual wordings, explicitly

expressed meanings […] general attitudes, ways of thinking, ways of laying out or understanding patterns of discourse" (Linell, 1998, p. 148). In this conceptualization, two closely interrelated characteristics of recontextualization, the *dynamic relationship* between source and target domains and the *bidirectionality* of metaphorical language use, are of particular importance.

The idea of *dynamic relationships* springs from the argument that the use of language is subject to continuous change. Consequently, metaphors establish dynamic links between two linguistic domains that are themselves continuously evolving. The perception of a metaphor's source domain is as much in flux as the perception of its target domain. In other words, if the interpretation of the source domain is altered (e.g., as a result of new neuro-scientific insights into the human mind), this ultimately affects the aptness and the heuristic value of the metaphor applied to the target domain (e.g., organizations). For that reason, vivid metaphors establish a *dynamic* link between the source and target domains (Wee, 2005), through which the contextual complexity of one domain can be made available to the other in the form of a co-evolutionary process (Seidl, 2002). Unfortunately, however, metaphor creation in organization studies hardly ever reflects this dynamic character: "Researchers often develop a laundry list of metaphors, ones that are detached from their constitutive context and their dynamic relationships" (Oswick, Putnam & Keenoy, 2004, p. 121).

The notion of *bidirectionality* encapsulates the fact that metaphors create not only dynamic but also two-way relationships between their source and target domains. Building on Linell's notion of recontextualization, Wee (2005, p. 367) emphasizes that the metaphorical relationship between the source and target domains does not equal a "one-way street" from source to target. Instead, the source domain may also be contextualized by an ever-evolving target domain. For example, metaphors that draw on the source domain of the human mind frequently help make information technology more intuitively comprehensible through

references to a computer's "memory" or its capacity to "learn." Conversely, such metaphors establish a dynamic path from the target domain of computers back to the source domain of the human mind—an example is the metaphorical distinction between the mind's "hardware" and "software." At the same time, given that metaphors are also horizontally connected to each other and form complex metaphorical domains (Cornelissen & Kafouros, 2008), when a metaphor (re-)establishes a strong and dynamic link to the source domain, it can revive related metaphors by means of recontextualization (and thus avoid its figurative "death;" see Figure 2). For instance, introducing a novel anthropomorphic metaphor into a given domain helps view other metaphors, such as organizational knowledge, learning, and memory, in a new light and also brings to the fore their initial link to the source domain, the human mind.

Following these considerations, we propose a three-step methodology for the use of metaphors in organization studies that takes fully into account the inherent dynamics, bidirectionality, and contextuality of the relationship between source and target domain. In Step 1 of the process of metaphor creation, the researcher needs to engage in an in-depth exploration of the source domain in light of the target domain. In other words, the target domain can provide a guiding principle for drawing selectively on relevant contextual aspects of the source domain. In Step 2, the in-depth description of the source domain facilitates the context-sensitive transfer of the metaphor. This essentially involves constructing the "metaphorical blend" (Lakoff & Turner, 1989, p. 82); that is, a new conceptual combination of elements from both the source and the target domains (e.g., the fusion of "memory" and "organization" into "organizational memory"). Whereas in conventional metaphor use the inner complexities of the source domain are typically not considered in depth, the principle of recontextualization requires the researcher to include the context in the metaphorical blend to the extent that meaningful metaphor construction permits (so-called "invariance principle";

Lakoff & Turner, 1989). In Step 3, a systematic evaluation is required to establish to what extent the newly constructed metaphor is both apt and has heuristic value (Cornelissen, 2004).

Methodological Illustration: Introducing the Metaphor of Organizational Insomnia

In order to illustrate our methodological approach, we introduce the new metaphor of *organizational insomnia*.

Step 1: Contextual Exploration of the Source Domain—Characteristics and Functions of Human Sleep

As argued above, the heuristic value of anthropomorphic metaphors in organization studies (e.g., organizational knowledge, learning, and memory; Spender, 1996) is diminished by the fact that their frequent use weakens the connection to the source domain of the human mind (and our ever-advancing understanding of it). The idea of recontextualization makes it necessary to revive the link between the application of such metaphors in organization studies and neuroscientific research on the human mind's ability to know, learn, and memorize. Recent research in this area has produced vast empirical evidence that sleep plays a vital role in the maintenance of these functions and that, in contrast, sleep deprivation or insomnia has a negative effect (e.g., Gais & Born, 2004; Hobson & Pace-Schott, 2002; Krueger et al., 2008).

Main characteristics of human sleep

Sleep is a fundamental physiological process of human life and is critical to physical and mental recovery, cognitive performance, health, and improving the sense of energy and well-being (Zisapel, 2007, p. 1175). Sleep is described in various ways; for instance, as "a state of immobility with greatly reduced responsiveness, which can be distinguished from coma or anesthesia by its rapid reversibility" (Siegel, 2005, p. 1264) or as "an orchestrated neurochemical process involving sleep-promoting and arousal centers in the brain" (Zisapel, 2007, p. 1174). As there are no direct indicators, the state of sleep is typically inferred from a

variety of indirect measurements; among them electrical activity, brain temperature, or heart rate (Krueger et al., 2008, p. 911). Nevertheless, there are three main characteristics of sleep that are pertinent to our considerations, namely, its (1) rhythmic occurrence, (2) self-referentiality, and (3) situational appropriateness.

Rhythmic occurrence. Humans experience sleep as a natural state of rest for body and mind. Without sleep, the human mind does not recover very well (Hobson & Pace-Schott, 2002). This dependence on sleep is shown by its cyclic occurrence, which typically follows the rhythm of night and day, also known as the *circadian cycle* (Muzur, 2005; Siegel, 2005). Human adults need seven to eight hours of sleep on average per twenty-four hours, which amount to almost a third of a person's lifetime (Ferrara & De Gennaro, 2001).

Self-referentiality. During sleep the human brain primarily focuses on itself and remains in a state of dissociation from its immediate environment, showing reduced sensitivity to environmental events; only extreme disruptions (e.g., an alarm clock's signal) induce conscious recognition and, potentially, stop sleep altogether. While humans are asleep, the mind is more sensitive to internal processes. During dreaming, in particular, the mind constructs a virtual and sometimes surrealistic simulation of real life (Revonsuo, 2003). In this regard, dreams can serve as a tool for both retrospective and prospective self-reflection.

Situational appropriateness. During sleep, humans are in a state of unconsciousness and greatly reduced responsiveness. Therefore, being asleep can be dangerous in certain situations—examples are episodes of microsleep, whether during a meeting at work or nodding off while driving. Such episodes may be attributed to fatigue caused by sleep dysfunctions that negatively affect the quality of sleep (e.g., insomnia). Indeed, a significant body of research (e.g., Morgenthaler et al., 2007) has focused on the development of sleep-disorder therapies, and on methods of inducing sleep in certain circumstances (e.g., by means of sedatives).

Functions of human sleep

Clearly, sleep affects overall well-being in significant ways. This section outlines the dominant theories about the functions of sleep. The first and most frequently cited function of sleep is that of *restoration* or *regeneration*. While in a state of sleep, the body repairs and rejuvenates (Benigton & Heller, 1995). Muscle growth, tissue repair, protein synthesis, growth-hormone release and similar activities all occur during sleep. The restorative effect of sleep is extremely important for the central nervous system (i.e., the brain) and for the mind. Although reposing and relaxing (referred to as *quiet waking*) can also rest the body, there is no substitute for sleep. As research has shown, sleep deprivation impairs cognitive functions more than physical functions (Maquet, 2001).

In addition to the vital importance of sleep for regeneration and recuperation, a second, relatively new and compelling theory emphasizes the crucial role of sleep in cognitive brain functions and in changes in the structure and organization of the brain. According to *brain plasticity theory* (e.g., Frank, 2006), sleep is important for brain development and directly and positively influences processes of knowledge, learning, and memory. These processes are often described as a sequence of acquisition, consolidation, and recall respectively. Whereas acquisition (the process of acquiring new information) and recall (accessing acquired information) predominantly occur while a person is awake, consolidation (the long-term stabilization of memory) primarily takes place during sleep through the reinforcement of neural connections that are vital for shaping memories (Stickgold, 2005).

The third function of sleep is closely tied to *dreaming*. In a traditional understanding, dreams are no more than a biological phenomenon that is enabled by psycho-physiological states and based on conscious, representational intelligence (Foulkes, 1993, p. 199). In contrast, recent theories argue that dreams have a problem-solving function (e.g., Revensuo, 2003). Dreaming helps to process and to filter stimuli, facilitates cortical regeneration, and

eliminates superfluous perceptions: during the period of dreaming "useless or non-usable perceptions are eliminated," and "the process of cortical regeneration (i.e. the elimination of the perceptual overload) occurs" (Muzur, 2005, p. 106). The very same function is highlighted by *threat simulation theory* (Revonsuo, 2003), which regards dreams as a rehearsal of responses to future threats. Because dreams play out actions and reactions in the context of hypothetical situations, they are endowed with a proactive and preparative function (Revonsuo, 2003, p. 86). Contemporary theories also argue that dreaming has an evolutionary function, because recurrent rehearsals increase the chances that threats experienced in real-life situations will be successfully handled. In sum, sleep and dreaming are inherently creative processes.

In addition to these theories, several studies have provided empirical evidence of the salient role of dreaming in learning and memory (e.g., Walker, 2005; Wamsley et al., 2010). For instance, in an experimental study, Wamsley and his colleagues (2010) trained subjects to perform a virtual navigation task and then retested them on the same task five hours later. In between, subjects were allowed either to take an afternoon nap or to rest awake while thinking about the tasks at hand. In the retest, improved performance among the subjects who took a nap was found to be strongly associated with task-related dream imagery during the nap. Among the subjects who rested awake, task-related thoughts were not found to improve performance: "These observations suggest that sleep-dependent memory consolidation in humans is facilitated by the offline reactivation of recently formed memories, and furthermore that dream experiences reflect this memory processing. That similar effects were not observed during wakefulness suggests that these mnemonic processes are specific to the sleep state" (Wamsley et al., 2010, p. 850).

Forms of insomnia and treatment strategies

Our explicit interest in the impact of sleep on memory consolidation and learning makes it necessary to discuss not only the positive effects of sleep but also the negative effects of a lack thereof. The latter may take the form of disorders (dyssomnias) that cause either excessive sleepiness or difficulty in initiating or maintaining sleep (Kupfer & Reynolds, 1997). Of the second type of malfunction, the most prominent example is *insomnia*. Diagnoses distinguish between *primary* and *secondary* insomnia. On the one hand, primary insomnia is not attributable to any exogenous cause but constitutes a disorder in itself. One example is *idiopathic insomnia*, a lifelong inability to obtain adequate sleep caused by an abnormality in the neurological control of the sleep–wake cycle (Ringdahl, Pereira & Delzell, 2004, p. 213). On the other hand, *secondary or co-morbid insomnia* is defined as a side effect of other conditions (e.g., a mental disorder, restless legs syndrome, brain lesions, etc.; Morin & Benca, forthcoming).

Furthermore, insomnia can be classified into transient, acute, or chronic forms according to the pattern of its occurrence (Holbrook et al., 2000; Ringdahl et al., 2004). While *transient* forms of insomnia last less than one week and are often caused by extrinsic factors, such as noise, altitude, time changes, poor sleeping conditions, or psychoactive drugs, *acute* forms of insomnia can last for a longer period (up to a month) and are often associated with intrinsic causes that either originate or develop within the body (Ringdahl et al., 2004, p. 212–213). These causes are often linked to psychophysiological factors like crises, stress, depression, or excessive worrying, all of which increase somatic tension and agitation (Wagner et al., 1983). In extreme cases, a prolonged period of sleep deprivation can even lead to an individual's death (the maximum period a human is known to have survived without sleep was only eleven days; similar results were obtained in experiments with rats; Everson,

Bergmann & Rechtschaffen, 1989). Sleeping disorders that last for longer than one month are instead defined as *chronic* insomnia.

The above shows that insomnia can have significant negative effects on mental and physical performance. Several studies confirm that sleep deprivation leads to memory impairment with relation to recently acquired tasks and curtails the neural changes that are normally observed and necessary for memory consolidation (Stickgold, 2005). Thus, the quantity and the quality of sleep have a profound impact on learning and memory, as well as on mental and physical regeneration. Studies on the negative consequences of periods of wakefulness on insomnia patients confirm this, highlighting that insomnia impairs the consolidation of memory (e.g., Maquet, 2011; Nissen et al., 2011).

Several experimental studies (e.g., Backhaus et al., 2006; Nissen et al., 2006) provide empirical support for the damaging effects of insomnia on higher cognitive functions such as learning or memory consolidation. For instance, Backhaus and her colleagues (2006) show that declarative memory consolidation (i.e., for facts or events) is impaired in insomnia patients with a sleep deficit. Their study confirms that "insomnia is indeed accompanied by distinct cognitive dysfunction that substantially disables these patients in their everyday life" (Backhaus et al., 2006, p. 1329). Nissen and his team (2006) provide additional evidence that patients suffering from insomnia often report difficulties in important cognitive domains, such as attention and memory. In their study, the authors investigate the influence of sleep-related memory consolidation on procedural tasks (i.e., skills). Their findings demonstrate that procedural memory consolidation is indeed more heavily impaired in insomnia patients than in the healthy control group (Nissen et al., 2006). More recently, the negative effects of sleep deprivation and insomnia on learning and memory were validated in functional imaging studies of human brains (for an overview, see Chee and Chuah, 2008).

All these experimental findings have implications for the development of treatment strategies. In general, treatment strategies depend on the causes (extrinsic/intrinsic) or the relative frequency (transient, acute, chronic) of insomnia (Morin & Benca, forthcoming). The two major types of treatment consist in either following a non-pharmacological approach or administering medication (Ringdahl et al., 2004, pp. 213–215). Most studies highlight the positive long-term effect of non-pharmacological treatment (e.g., Backhaus et al., 2006), which is recommended as a first-line and long-term strategy of managing insomnia (Smith et al., 2002). They involve paying attention to external factors such as "sleep hygiene," but also mindfulness-based meditation, controlled relaxation periods, stimulus-control therapy (i.e., controlling the sleep environment, creation of sleep routines), and cognitive behavioral therapy (i.e., education about sleep in order to target dysfunctional beliefs about or attitudes to sleep; see Kupfer & Reynolds, 1997, p. 342). Pharmacological treatments should only be used in the lowest effective dose and only for a short period of time, given that sleeping tablets or other sedatives can cause physical dependence and may make it harder for people to re-establish an acceptable sleep cycle (Holbrook et al., 2000; Ringdahl et al., 2004, p. 214). To summarize, sleep is closely connected to the human mind's abilities for knowledge, learning, and memory, while sleep disorders like insomnia significantly impair these abilities and further physiological and psychological functions. In the next section, we will transfer the notion of insomnia to the organizational domain by introducing a new metaphor.

Step 2: Recontextualizing the Target Domain – The Metaphor of Organizational Insomnia

In order to transfer the concepts of sleep and insomnia to the target domain of organizations, it is necessary to clarify how organizations and the human mind are understood in the context of this study. Our argumentation is fundamentally grounded in process ontology and epistemology (Hernes, 2008; Tsoukas & Chia, 2002). That is to say, we understand both the

human mind and the organization as ongoing processes that are continuously in flux and unfold over time, not as given and fixed entities. Within this perspective, our approach is informed in particular by the idea that organizations are constituted by interconnected processes of communication (e.g., Luhmann, 2000; Taylor & van Every, 2000). According to Luhmann (1995, p. 15) the human mind is generally comparable to the organization, as they both represent *autopoietic* (i.e., self-reproducing) and processual entities. This theoretical claim is based on the idea of *functional equivalence*: just as the ongoing flow of thought is the constitutive process of the human mind, so the ongoing flow of communication is the constitutive process of organizations. In that respect, Luhmann's framework (1995, 2000) lends itself particularly to drawing metaphorical cross-references between the two domains. His processual notion of organizations will prove important in elucidating our use of metaphor to transfer the concept of insomnia to the unfamiliar domain of organizations.

As shown above, sleep has a profound effect on the mind's way of operating. One of the main characteristics of sleep in humans is the state of *self-referentiality*. During sleep, the mind is less sensitive to stimuli from the environment; it tends to process past experiences and "conjure up" potential events (what humans experience in the form of dreams; Revensuo, 2003). Transferring this into the context of organizations and building on the analogy, we define *organizational sleep* as the regular, temporary, and self-referential withdrawal of the organization (which is viewed as an entity constituted by communicative processes and practices) from direct interaction with its environment. Assuming that organizations consist of interlocking communicative events (Luhmann, 2000; Taylor & van Every, 2000), organizational sleep implies that organizational communication primarily focuses on past and future organizational practices in a self-referential way, rather than on immediate environmental stimuli. Consequently, it is the withdrawal from the environment that serves as an important precondition for self-reflection.

A second characteristic of human sleep is its *cyclic rhythm*. The physical as well as the mental health of human beings depends on this regular cycle, not least because it is during sleep that past experiences are consolidated (Stickgold, 2005). When this idea is transferred to organizations, sleep describes a mechanism that follows a similar rhythm—a clockwork that figuratively puts organizations to sleep and wakes them up. By analogy to the function of dreaming in humans, it can be argued that when organizations regularly enter a state of self-referentiality and temporarily withdraw from their environment, they have the opportunity to consolidate and reflect on past experiences (Wamsley et al., 2010) and try out responses to threat simulation (Revonsuo, 2003) in a creative way. Indeed, the importance of temporal rhythms and variability has been emphasized in literature on the time dimension in the context of organizations (e.g., Klarner & Raisch, forthcoming; Lee & Liebenau, 1999; Mintzberg & Westley, 1992).

It is worth noting the parallels between the organizational sleep metaphor and the widely established notion of *strategic episodes* in organization theory and practice. Hendry and Seidl (2003, p. 176) point out that through strategic episodes "organizations are able to routinely suspend their normal routine structures of discourse, communication and hierarchy, and so create the opportunity for reflexive strategic practice." The analogy between sleep and organizational withdrawal from the environment notwithstanding, there is an important dissimilarity between human and organizational sleep. While in humans sleep affects the entire organism, only local forms of withdrawal have been observed in organizations. Strategic workshops, educational seminars, open-space forums, and the like are forms of "local" sleep, where a part of the organization is tied up in communication processes that relate to the restructuring and consolidation of past decisions. In large organizations, at any rate, these events hardly ever involve the organization as a whole.

The related metaphor of *organizational insomnia*, in turn, refers to the organization's inability to withdraw regularly and thus induce states of "sleep." This results from being constantly "on the edge" and never entering periods of withdrawal and self-referentiality. This assessment is in line with the process ontology underlying our study. According to Luhmann (2000, p. 418), the existence of social systems, such as organizations, is continuously endangered in two ways: they either tend to lose themselves in pure self-referentiality, which makes them insensitive to environmental stimuli (this could be described as a pathology of organizational hypersomnia or narcolepsy, i.e., a state of excessive, chronic sleepiness), or they may become engulfed by their environment and lose the capacity of introspection and relaxation (metaphor of organizational insomnia).

Drawing on the neuroscience of sleep (see Step 1), we can distinguish between three forms of organizational insomnia on two levels. On the first level, *primary* insomnia is viewed as a full-fledged pathology, while *secondary* (or co-morbid) insomnia is typically the principal result or side effect of other pathologies. On the second level (i.e. the temporal dimension), a distinction is drawn between *transient or acute* and *chronic* forms of organizational insomnia. We substantiate this typology by drawing on evidence from earlier studies in the field of management and organization studies. In this regard, our study contributes to the existing literature by bringing together insights from various branches of the field and reinterpreting them through the new metaphorical lens of organizational insomnia.

Secondary transient or acute organizational insomnia: management fashions

In humans, insomnia is mostly a temporary condition, typically induced by stressful situations, personal crises, or changes in behavioral rhythms. This type of transient or acute insomnia is "often associated with life events or sleep schedule changes (e.g., jetlag or shift work) and usually remits once the precipitating event has subsided" (Morin & Benca, forthcoming, p. 2). For that reason, this is usually referred to as *secondary* insomnia. If we

transfer this notion to the organizational domain, the transient or acute type of secondary insomnia metaphorically describes temporary forms of organizational restlessness that are externally induced. One potential cause of this type of organizational insomnia is the adoption of management fashions.

Research on fads and fashions in management and organization studies (e.g., Abrahmson & Fairchild, 1999; Kieser, 1997) points out that business firms face isomorphic pressures to adopt the latest fashion of management concepts, models, and practices, such as, "Total Quality Management," "Business Process Reengineering," or the "Balanced Scorecard" (Newell, Robertson & Swan, 2001, p. 8). As Williams (2004) highlights, the dissemination of fashions in management is powerfully driven by consulting firms, which use them as a means of creating a recurrent need for their services. However, such concepts and practices remain "fashionable" only for a limited period (and typically follow a bell-shaped diffusion curve; Abrahamson & Fairchild, 1999) until they are replaced by the next trend. Nevertheless, they are a particularly apt example of the secondary acute or transient type of organizational insomnia for two reasons: first, the implementation of management fashions forces organizations to focus at least temporarily on modifying existing processes and routines. This usually involves external service providers such as consultants (Williams, 2004) and is often done under the kind of pressure that puts an organization metaphorically "on the edge"—a case of what we have defined as insomnia. Second, this type of organizational insomnia is secondary or co-morbid in that the "restlessness" is a side effect of the organization's efforts to restructure and reform.

As in the case of human insomnia, the transient or acute form of secondary organizational insomnia has no significantly harmful effects on knowledge, learning, and memory. However, as Abrahmson and Fairchild (1999) have shown, as soon as a certain fashion has been implemented, it may already be outdated, and the organization may be

already reorienting itself to the next trend. Therefore, organizations that regularly follow management fashions (much like "fashion victims") are particularly prone to the chronic type of organizational insomnia, which we will describe in detail in the next section.

Secondary chronic organizational insomnia: Endless reorganization

In the case of humans, personal crises or traumatic experiences frequently lead to chronic forms of recurrent insomnia. A similar pattern can be discerned in organizations, where ongoing crises may create an urge to continuously change existing practices and routines. However, especially in organizations that are eager to adopt the latest management fashions, the pattern of recurrent change can become chronic (Abrahamson & Fairchild, 1999; Kieser, 1997). In the literature, this pathological pattern is referred to as "endless reorganization" (Probst & Raisch, 2005, p. 93) or "perpetual loading" (Bruch & Menges, 2010, p. 83). In other words, these firms operate under the pressure to continuously re-invent themselves and their structures. Mayrhofer describes organizations in such a state as "'chronically unfrozen systems' […] that are characterized by a continuous latent restlessness" (Mayrhofer, 1997, p. 520). Importantly, as McKinley and Scherer (2000) emphasize, such processes of reorganization may trigger the need for further reorganization in a self-reinforcing manner.

Probst and Raisch (2005) directly relate states of restlessness to organizational failure. In an effort to identify a shared logic of failure among the 100 largest organizational crises from 1998 to 2002 (primarily firm bankruptcies and large-scale crashes on the stock market) the authors identify a common pattern of what they call "organizational burnout syndrome" (Probst & Raisch, 2005, p. 91)—notably, another anthropomorphic metaphor. This pathology is described as a combination of excessive growth and uncontrolled change that reduces the capacity for organizational knowledge, learning, and memory by recurrently destabilizing the system and ultimately paves the way for the organization's decline (Probst & Raisch, 2005, p. 91). The authors arrive at the conclusion that, instead of aiming at maximal

growth, organizations should strive to stabilize their structures and growth rates. In a similar vein, Larson, Schnyder, Westerhuis, and Wilson (2011, p. 54) diagnose that various financial institutions suffer from some form of "structural restlessness" that is characterized by regular reorganizations and restructurings. By analyzing the frequency of reorganizations in three banks from 1973 to 2000, the authors show that the higher the structural restlessness of a bank, the lower its performance (Larson et al., 2011, p. 59).

In the same context, Brown and Eisenhardt (1997) introduce an important distinction between two forms of change: they observe that rhythmic, time-paced change allows organizations to set proactively the tempo of their markets or industries, whereas continuous, event-paced organizational change is prone to frequent failure. Similarly, Mayrhofer (1997) and Weick (2000) point out that abrupt changes may disrupt unnecessarily the evolution of firms and thus do more harm than good. In a recent study, Klarner and Raisch (forthcoming) empirically confirm these suggestions and distinguish between regular and irregular rhythms of change, depending on the frequency and length of the respective periods. In their extensive study of the European insurance industry from 1995 to 2004, they show that, in the long run, companies that change regularly tend to outperform those that change irregularly and thus provide evidence that organizations benefit from establishing *cyclic rhythms* (King, Down & Bella, 2002; Mintzberg & Westley, 1992). In other words, seen through the lens of organizational sleep and insomnia, these findings indicate that organizations generally seem to benefit from alternating regularly between states of stability and change, similarly to human sleep–wake cycles.

Primary chronic insomnia: always-on

Organizational insomnia may result from recurrent change but, like human insomnia, it may also constitute a primary pathology in its own right. In view of that, a state of restlessness so deeply ingrained as to have become the business model of an organization can be

characterized as primary chronic organizational insomnia. Project-based organizations, for instance, are particularly susceptible to developing this type of organizational insomnia. Schoeneborn (2008) empirically studied the cross-project learning practices of a multinational consulting firm and concluded that the organization could be described as "permanently restless" (p. 160): consultants tended to rush from one project to the next without pausing in between to review or to consolidate the experience they had gained from past projects. The consultants focused primarily on their "billability," that is, their availability to work on new projects that can be billed to the client. In turn, the acquisition of new projects was found to outweigh the importance of learning from the way in which past projects had been handled.

On the organizational level, such patterns result in a lack of sleep where organizational processes and routines are "always on" and just keep running. For instance, the financial crisis that started in 2008 can be traced to an insatiable demand for mortgage-backed securities. This created a market environment where "producing" such securities became increasingly attractive. In order to gather more "material" for mortgage-backed securities, credit standards for borrowers were continuously lowered (Lewis, 2010). At some point, the companies that dealt in such securities attempted to satisfy the shortage in mortgages by creating these products "synthetically," that is, by replicating the payment streams of these products through contractual agreements (Tett, 2009). In such an environment, financial institutions had every incentive to focus on a short-sighted race for profits that lacked the regular pauses for consolidation and reflection that organizational sleep would have provided.

The literature of organization studies provides much and varied evidence of the failure of insomniac organizations to learn. For instance, Farjoun and Starbuck (2007) characterize NASA as an extreme type of organization that continuously operates "at and beyond [its] limits." Using NASA's Columbia space shuttle disaster as an example, the authors argue that organizations which continuously exceed their limits (e.g., operate in a state of perpetual

restlessness) generally score low when it comes to knowledge, learning, and memory (Farjoun & Starbuck, 2007, p. 553). Tucker and Edmondson (2003) paint a bleak picture of healthcare in the United States, where the inability of hospitals to at least temporarily withdraw from around-the-clock patient care both creates enormous problems for individuals and seriously hampers organizational learning.

The inability to metaphorically "fall asleep" or rest in some other manner is a recurrent theme also in the image that service companies in various industries project; however, they present this characteristic in an entirely positive light: for instance, in an allusion to Frank Sinatra's famous song "New York, New York," IBM proudly declares itself to be "the company that never sleeps," thus positively associating success with a state of being constantly energetic. Similarly, Citigroup has run an advertising campaign entitled "Citi Never Sleeps," while FirstBank's recent advertising slogan reads characteristically "Banking For the Insomniac."

Summarizing discussion

The studies cited further up yield substantive evidence from organizational practice (1) that many organizations exhibit what has been described as a pathology of organizational insomnia and (2) that the three types of organizational insomnia, and especially their chronic forms (either secondary or primary) can indeed be detrimental to organizational knowledge, learning, and memory (see, e.g., Farjoun & Starbuck, 2007; Probst & Raisch, 2005). Insomniac organizations are unable to devote themselves to periods of reflective introspection and, as a result, are trapped in a state of constant activity and alertness. The side effects of organizational insomnia mirror those that actual insomnia has on the human mind, such as limiting the capability of consolidating and thus learning from experience. Table 1 compares the key aspects of the three forms of organizational insomnia identified further up.

Insert Table 1 About Here

Our discussion and examples lead naturally to the question of the most suitable treatment of organizational insomnia and its potentially detrimental side effects on knowledge, learning, and memory. Going back to the field of neuroscience, as explained above (see Step 1), the most effective methods of treating primary and secondary forms of insomnia in humans involve behavioral, rather than pharmacological therapy. In organizations, the corresponding approach involves breaking deeply rooted patterns and routines that underlie organizational restlessness; for instance, pausing between projects and investing time and effort in consolidating lessons learned from previous projects (Schoeneborn, 2008). However, in the case of secondary chronic organizational insomnia (i.e., endless reorganization), the behavioral approach may lead to the paradox of fighting endless change by introducing yet another change.

In the course of the present analysis, we have reinterpreted empirical research from the field of organization studies through the lens of the organizational insomnia metaphor. This approach highlights the self-referentiality and rhythmicality of organizations, shedding new light on the existing metaphors of organizational knowledge, learning, and memory. Drawing on studies from this metaphor's source domain, the human mind, helped build the argument that organizational knowledge, learning, and memory depend on whether or not an organization can maintain a cyclic rhythm that alternates between operating "on the edge" (i.e., being constantly alert) and temporarily withdrawing from the environment to observe itself in a self-referential way (i.e., being asleep). Importantly, as Figure 3 shows, the newly introduced metaphor alters our previous understanding of other concepts within the same metaphorical domain. Because of its novelty and its ability to surprise, which is typical of

metaphors in the beginning of their lifecycle, the insomnia metaphor can illuminate and revive existing metaphors by restoring their connection to their source domain.

Insert Figure 3 About Here

Step 3: Evaluating Organizational Insomnia: The Aptness and Heuristic Value of the New Metaphor

In the final step of creating the new metaphor, we evaluate the metaphor of organizational insomnia with regard to its aptness and heuristic value. Drawing on the work of Fauconnier and Turner (2002), Cornelissen and his colleagues (2005) developed a set of criteria for evaluating metaphors with respect to their aptness and heuristic value. Cornelissen (2006a) distilled these criteria into eight "optimality principles," which aim to cover exhaustively the full range of metaphorical value-creation. In the following, we discuss the aptness and heuristic value of the metaphor of organizational insomnia against the background of these criteria.

Insert Table 2 About Here

Table 2 provides an evaluation of the organizational insomnia metaphor, which satisfies a wide range of criteria that are related to its *heuristic value*. The distance between the two semantic domains on which it is based—organizations and the human mind with respect to the state of sleep—is fairly wide, and the way in which it bridges these domains is unconventional (*distance principle*). This metaphor also allows researchers to "unpack" further inferences – for example, about the phenomenon of dreaming (*unpacking principle*). As we have shown, the metaphor gains significance by becoming related to highly relevant

organizational phenomena, such as management fashions (*good reason principle*). Moreover, as argued above, the metaphor's strength lies in that it establishes and maintains a dynamic relationship between the source and the target domains (*web principle*); in this case a relationship that remains robust and has the potential to yield new insights, even if the interpretation of the source domain changes (in the case of the organizational insomnia metaphor such changes would reflect neuroscientific advancements in understanding the source domain of the human mind).

The criterion of *aptness* is similarly satisfied in various respects: our metaphor integrates equivalent negative effects that insomnia has on the capabilities of both the human mind and organizations with regard to knowledge, learning, and memory (*integration principle*). It also generates a topology of relations to other metaphors (e.g., organizational knowledge, learning, and memory), as well as to new sub-metaphors (e.g., organizational hypersomnia, dreaming, or "power napping"). This, in turn, leads to the mutual recontextualization of metaphors—for example, through the reinterpretation of organizational knowledge, learning, and memory in the light of the insomnia metaphor, which helps to form a new and more complex metaphorical domain (*topology principle*). It also facilitates metonymic referencing (i.e., when one part represents the whole or the other way around; the principles known respectively as *pars pro toto* or *totum pro parte*); an example of this would be a description of organizational insomnia in terms of the restlessness experienced by individual organizational members (as in, e.g., Bruch & Menges, 2010, or Probst & Raisch, 2005; *metonymic tightening principle*).

However, one important shortcoming of the metaphor with respect to aptness is its comparably low degree of concreteness (*concreteness principle*), even though we have gathered evidence from organizational practice for the prevalence of the insomniac pathology (e.g., Bruch & Menges, 2010; Farjoun & Starbuck, 2007; Klarner & Raisch, forthcoming;

Probst & Raisch, 2005). However, a fundamental difference between organizational forms of self-referential withdrawal from the environment, as in the case of strategic episodes or retreats (Hendry & Seidl, 2003), and the state of sleep in the human mind is that the former are inherently local. In the same context, it is important to note that the state of organizational sleep, as we have conceptualized it, is not merely a "corporate stability strategy" (Glueck, 1980) but is intrinsically linked to the notion of rhythmic change and learning (Klarner & Raisch, forthcoming). This poses a challenge to researchers who are interested in pursuing the metaphor of sleep and insomnia and its variants and sub-metaphors in the context of organizations, because it requires them to refine the notion of organizational sleep in order to strengthen the metaphor's aptness. In summary, although the organizational insomnia metaphor generally scores high on heuristic value, because it leverages the "power of dissimilarity" (Oswick et al., 2002, p. 301), it does not score quite as well on aptness, because of its limited concreteness with regard to organizational sleep. This, however, may be at least in part due to the novelty of the concept, which will undoubtedly benefit from further theoretical and empirical research.

Conclusion

In this paper, we have argued that the use of anthropomorphic metaphors in organization studies tends to neglect the inherent *dynamics* and *bidirectionality* of metaphorical language (Wee, 2005, p. 367). In response, we proposed a three-step methodology that allows researchers to tap into a metaphor's potential for dynamic and mutual *recontextualization* between the source and target domain (Linell, 1998). We have illustrated this methodology with the new metaphor of *organizational insomnia*. This metaphor pinpoints deficits in organizational knowledge, learning, and memory and relates them to an organization's inability to establish cycles of sleep and wakefulness; that is, to engage temporarily but regularly in self-referentiality and creative reflection on past experiences.

The contributions of our study are threefold. First, we contribute to recent studies on metaphors in the context of organizations (e.g., Cornelissen, 2004, 2005, 2006a, 2006b; Cornelissen & Kafouros, 2008; Oswick et al., 2002) by proposing a methodology for the context-sensitive use of metaphors. The successful application of anthropomorphic metaphors to organizations has certain limitations, which require that such metaphors remain embedded in the metaphorical context of their source domain, the human mind. We argue that the heuristic value of metaphors increases if they are treated as interdependent in their respective domains. On a more general level, we believe that this study allows for further investigations into a growing area of research that focuses on the importance of language in the study of organizations (see Cooren, Kuhn, Cornelissen & Clark, 2011).

Second, the newly introduced metaphor of organizational insomnia complements and recontextualizes and potentially revives the existing metaphors of organizational knowledge, learning, and memory with respect to cycles of sleep and wakefulness. In this context, we distinguished between various forms of organizational insomnia (primary or secondary; transient/acute or chronic), synthesizing and reanalyzing existing works from various branches of organization studies and reinterpreting them through the new metaphorical lens of organizational insomnia. Overall, it is our view that the phenomenon of organizational insomnia reflects an overarching societal trend known as "social acceleration" (Rosa & Scheuerman, 2009). In light of that, the metaphorical pathology we introduce provides further evidence from the organizational domain for this more general trend.

Third, by introducing the organizational insomnia metaphor, we contribute to the further integration of insights from both organization studies and neuroscience. Some recent studies have already taken the first steps towards an integrative "organizational neuroscience" (for an overview see Becker, Cropanzano & Sanfey, 2011). However, most such research is limited to the level of individuals in that it transfers neuroscientific insights into the human

mind to the role of individual actors in organizational contexts (e.g., Senior & Butler, 2007). In contrast, our study uses metaphor to relate such insights from the source domain of the human mind to the target domain of organizations.

Finally, the present study opens up avenues for further interdisciplinary research into the different sub-phases of sleep, cultural differences in experiencing sleep, and sleep in the case of other animals, all of which will help refine and expand the central metaphor of this paper. We hope that our study will inspire researchers to look into other fields, such as zoology, and seek to illustrate their arguments with the help of zoomorphic metaphors. For instance, it is known that migratory birds continue to fly while their brain is partly asleep (Huber, Ghilardi, Massimini & Tononi, 2004) or that bottlenose dolphins are able to swim with one eye closed and one half of their brains asleep (Goley, 1999). Interestingly, recent studies in cognitive neuroscience have provided tentative evidence that there may be cases of localized sleep in humans (Krueger et al., 2008). Such sleep-like states are likely to involve local neural networks and be *use-dependent*, that is, highest in areas that are intensively used during wakefulness. If this hypothesis is further substantiated by evidence that human sleep can also be localized, this will eliminate one of the main dissimilarities we identified between humans and organizations with regard to sleep. Furthermore, future research could explore the significance of insomnia at different stages of an organization's lifecycle. Considering that there are several differences between the effects of sleep and insomnia on infants and those on adolescents or adults (Morin & Benca, forthcoming), it is possible that there are similar differences between the various stages of organizational development. Future research will also need to study the *situational appropriateness* of organizational sleep. This will help specify the conditions under which organizational sleep is beneficial and, crucially, the conditions under which it may be harmful to organizational knowledge, learning, and memory.

References

Abrahamson, E., & Fairchild, G. (1999). Management fashion: Lifecycles, triggers, and collective learning processes. *Administrative Science Quarterly, 44*(4), 708-740.

Andersen, J.A. (2008). An organization called Harry. *Journal of Organizational Change Management*, *21*(2), 174-187.

Anderson, M. H. & Sun, P .Y. T. (2010). What have scholars retrieved from Walsh and Ungson (1991)? A citation context study. *Management Learning*, *41*(2), 131-145.

Backhaus, J., Junghanns, K., Born, J., Hohaus, K., Faasch, F., & Hohagen, F. (2006). Impaired declarative memory consolidation during sleep in patients with primary insomnia: Influence of sleep architecture and nocturnal cortisol release. *Biological Psychiatry*, *60*, 1324-1330.

Baumard, P., & Starbuck, W. H. (2005). Learning from failures: Why it may not happen. *Long Range Planning*, *38*(3), 281-298.

Becker, W. J., Cropanzano, R., & Sanfey, A.G. (2011). Organizational neuroscience: Taking organizational theory inside the neural black box. *Journal of Management, 37*(4), 933-961.

Benigton, J. H., & Heller, H. C. (1995). Restoration of brain energy metabolism as the function of sleep. *Progress in Neurobiology, 45*, 347-360.

Brown, S. L., & Eisenhardt, K. M. (1997). The art of continuous change: Linking complexity theory and time-paced evolution in relentlessly shifting organizations. *Administrative Science Quarterly, 42*(1), 1-34.

Bruch, H., & Menges, J. I. (2010). The acceleration trap. *Harvard Business Review, 88*(3), 80-86.

Chee, M. W. L., & Chuah, L. Y. M. (2008). Functional neuroimaging insights into how sleep and sleep deprivation affect memory and cognition. *Current Opinion in Neurology, 21,* 417-423.

Cooren, F., Kuhn, T. R., Cornelissen, J. P., & Clark, T. (2011). Communication, organizing, and organization. *Organization Studies, 32*(9), 1149–1170.

Cornelissen, J. P. (2004). What are we playing at? Theatre, organization, and the use of metaphor. *Organization Studies, 25*(5), 705-726.

Cornelissen, J. P. (2005). Beyond compare: Metaphor in organization theory. *Academy of Management Review, 30*(4), 751-764.

Cornelissen, J. P. (2006a). Making sense of theory construction: Metaphor and disciplined imagination. *Organization Studies, 27*(11), 1579-1597.

Cornelissen, J. P. (2006b). Metaphor and dynamics of knowledge in organization theory: A case study of the organizational identity metaphor. *Journal of Management Studies, 43*(4), 684-709.

Cornelissen, J. P., & Kafouros, M. (2008). The emergent organization: Primary and complex metaphors in theorizing about organizations. *Organization Studies, 29*(7), 957-978.

Cornelissen, J. P., Kafouros, M. & Lock, A. R. (2005). Metaphorical images of organization: How organizational researchers develop and select organizational metaphors. *Human Relations, 58*(12), 1545 -1578.

Cornelissen, J. P., Oswick, C., Christensen, L. T., & Phillips, N. (2008). Metaphor in organizational research: Context, modalities and implications for research. *Organization Studies*, *29*(1), 7-22.

Currie, G., & Kerrin, M. (2004). The limits of a technological fix to knowledge management: Epistemological, political and cultural issues in the case of intranet implementation. *Management Learning, 35*(1), 9-29.

de Holan, P. M., & Phillips, N. (2004). Remembrance of things past? The dynamics of organizational forgetting. *Management Science, 50*(11), 1603-1613.

Dodgson, M. (1993). Organizational learning: A review of some literatures. *Organization Studies, 14*(3), 375-394.

Easterby-Smith, M., & Lyles, M. A. (2011). In praise of organizational forgetting. *Journal of Management Inquiry*, *20*(3), 1-6.

Everson, C. A., Bergmann, B. M., & Rechtschaffen, A. (1989). Sleep deprivation in the rat: Total sleep deprivation. *Sleep*, *12*(1), 13-21.

Farjoun, M., & Starbuck, W. H. (2007). Organizing at and beyond the limits. *Organization Studies, 28*(4), 541-566.

Fauconnier, G., & Turner, M. (2002). *The way we think*. New York: Basic Books.

Ferrara, M., & De Gennaro, L. (2001). How much sleep do we need? *Sleep Medicine Reviews, 5*(2), 155-179.

Foulkes, D. (1993). Dreaming and REM sleep. *Journal of Sleep Research, 2*, 199-202.

Frank, M. G. (2006). The mystery of the sleep function: current perspectives and future directions. *Reviews in the Neurosciences, 17*, 375-392.

Gais, S., & Born, J. (2004). Declarative memory consolidation: Mechanisms acting during human sleep. *Learning and Memory, 11*, 679-685.

Glueck, W. F. (1980). *Business policy and strategic management*. New York: McGraw-Hill

Goley, P. D. (1999). Behavioral aspects of sleep in pacific white-sided dolphins. *Marine Mammal Science*, *15*(4), 1054-1064.

Hendry, J., & Seidl, D. (2003). The structure and significance of strategic episodes: Social systems theory, and the routine practices of strategic change. *Journal of Management Studies, 40*(1), 175-196.

Hernes, T. (2008). *Understanding organization as process: Theory for a tangled world*. London: Routledge.

Hobson, J. A., & Pace-Schott, E.F. (2002). The cognitive neuroscience of sleep: Neuronal systems, consciousness and learning. *Nature Reviews Neuroscience, 3*(9), 679-693.

Holbrook, A. M., Crowther, R., Lotter, A., Cheng, C., King, D. (2000). The diagnosis and management of insomnia in clinical practice: a practical evidence-based approach. *Canadian Medical Association Journal, 162*(2)*,* 216-220.

Huber, R., Ghilardi, M.F., Massimini, M., & Tononi, G. (2004). Local sleep and learning, *Nature*, *430,* 78-81.

Kieser, A. (1997). Rhetoric and myth in management fashion. *Organization*, *4*(1), 49-74.

King, J., Down, J. T., & Bella, D. A. (2002). Learning to think in circles. *Journal of Management Inquiry, 11*(2), 161 -170.

Klarner, P., & Raisch, S. (forthcoming). Move to the beat: Rhythms of change and firm performance. *Academy of Management Journal*.

Krueger, J. M., Rector, D. M., Roy, S., Van Dongen, H. P. A., Belenky, G., & Panksepp, J. (2008). Sleep as a fundamental property of neuronal assemblies. *Nature Reviews, 9*, 910-919.

Kupfer, D. J., & Reynolds, C. F. (1997). Management of insomnia. *New England Journal of Medicine, 336*(5), 341-346.

Lakoff, G., & Turner, M. (1989). *More than cool reason: A field guide to poetic metaphor*. Chicago: University of Chicago Press.

Larson, M. J., Schnyder, G., Westerhuis, G., & Wilson, J. (2011). Strategic responses to global challenges: The case of European banking, 1973–2000. *Business History*, *53*(1), 40-62.

Lee, H., & Liebenau, H. (1999). Time in organizational studies: Towards a new research direction. *Organization Studies, 20*(6), 1035-1058.

Lewis, M. (2010). *The big short: Inside the doomsday machine*. New York: Norton.

Lichtenthaler, U. (2009). Absorptive capacity, environmental turbulence, and the complementarity of organizational learning processes. *Academy of Management Journal*, *52*(4), 822–846.

Linell, P. (1998). Discourse across boundaries: On recontextualizations and the blending of voices in professional discourse. *Text, 18*(2), 143-157.

Luhmann, N. (1995). *Social systems*. Stanford, CA: Stanford University Press.

Luhmann, N. (2000). *Organisation und Entscheidung*. Opladen: Westdeutscher Verlag.

Maquet, P. (2001). The role of sleep in learning and memory. *Science, 294*, 1048-1052.

Maquet, P. (2011). Memory consolidation in insomnia patients: First steps towards understanding a complex issue. *Journal of Sleep Research, 20*(2), 127-128.

Mayrhofer, W. (1997). Warning: Flexibility can damage your organizational health! *Employee Relations*, *19*(6), 519-534.

McCloskey, D. N. (1983). The rhetoric of economics. *Journal of Economic Literature*, *21*, 481-517.

McKinley, W., & Scherer, A. G. (2000). Some unanticipated consequences of organizational restructuring. *Academy of Management Review*, *25*(4), 735-752.

Miner, A. S., & Mezias, S. J. (1996). Ugly duckling no more: Pasts and futures of organizational learning research. *Organization Science, 7*(1), 88-99.

Mintzberg, H., & Westley, F. (1992). Cycles of organizational change. *Strategic Management Journal, 13*(S2), 39-59.

Morgan, G. (1980). Paradigms, metaphors, and puzzle solving in organization theory. *Administrative Science Quarterly, 25*(4), 605-622.

Morgan, G. (1986). *Images of organization*. Beverly Hills, CA: Sage.

Morin, C. M., & Benca, R. (fortchoming). Chronic insomnia. *The Lancet*.

Morgenthaler, T. I., Kapur, V. K., Brown, T., Swick, T. J., Alessi, C., Aurora, R. N., et al. (2007). Practice parameters for the treatment of narcolepsy and other hypersomnias of central origin. *Sleep, 30*(12), 1705-1711.

Muzur, A. (2005). Toward an integrative theory of sleep and dreaming. *Journal of Theoretical Biology, 233,* 103-118.

Newell, S., Robertson, M., & Swan, J. (2001). Management fads and fashions. *Organization*, *8*(1), 5-15.

Nissen, C., Kloepfer, C., Nofzinger, E. A., Feige, B., Voderholzer, U., & Riemann, D. (2006). Impaired sleep-related memory consolidation in primary insomnia: a pilot study. *Sleep*, *29*(8), 1068-1073.

Nissen, C., Kloepfer, C., Feige, B., Piosczyk, H., Spiegelhalder, K., Voderholzer, U., & Riemann, D. (2011). Sleep-related memory consolidation in primary insomnia. *Journal of Sleep Research, 20*(2), 129-136.

Oswick, C, Keenoy, T., & Grant, D. (2002). Metaphor and analogical reasoning in organization theory: Beyond orthodoxy. *Academy of Management Review, 27*(2), 294-303.

Oswick, C., Putnam, L. L., & Keenoy, T. (2004). Tropes, discourse and organizing. In D. Grant, C. Hardy, C. Oswick, & L. L. Putnam (Eds.), *Handbook of organizational discourse* (pp. 105-128). Thousand Oaks, CA: Sage.

Probst, G., & Raisch, S. (2005). Organizational crisis: The logic of failure. *Academy of Management Executive, 19*(1), 90-105.

Revonsuo, A. (2003). The reinterpretation of dreams: An evolutionary hypothesis of the function of dreaming. In E.F. Pace-Schott, M. Solms, M. Balgrove & S. Harnard (Eds.), *Sleep and dreaming: Scientific advances and reconsiderations* (pp. 85-109). Cambridge, UK: Cambridge University Press.

Ringdahl, E. N., Pereira, S. L., Delzell, J. E. (2004). Treatment of primary insomnia. *Journal of the American Board of Family Medicine*, *17*(3), 212-219.

Rosa, H., & Scheuerman, W.E. (Eds.). (2009). *High-speed society: Social acceleration, power, and modernity*. University Park, PA: University of Pennsylvania Press.

Schneider, S. C., & Angelmar, R. (1993). Cognition in organizational analysis: Who's minding the store? *Organization Studies*, *14*(3), 347-374.

Schoeneborn, D. (2008). *Alternatives considered but not disclosed: The ambiguous role of PowerPoint in cross-project learning*. Wiesbaden: VS.

Seidl, D. (2002). Metaphorical self-descriptions of organizations. In A. Kieser & A. P. Müller (Eds.), *Communication in organizations: Structures and practices* (pp.165-184). New York: Lang.

Senior, C., & Butler, M. J. R. (Eds.). (2007). *The social cognitive neuroscience of organizations*. Boston: Blackwell.

Siegel, J. M. (2005). Clues to the function of mammalian sleep. *Nature, 437,* 1264-1271.

Smith, M. T., Perlis, M. L., Park, A., Smith, M. S., Pennington, J. M., Giles, D. E., & Buysse, D. J. (2002). Comparative meta-analysis of pharmacotherapy and behavior therapy for persistent insomnia. *American Journal of Psychiatry, 159*, 5-11.

Spender, J.-C. (1996). Organizational knowledge, learning and memory: Three concepts in search of a theory. *Journal of Organizational Change Management, 9*(1), 63-78.

Stickgold, R. (2005). Sleep-dependent memory consolidation. *Nature, 437*, 1272-1278.

Taylor, J. R., & van Every E. J. (2000). *The emergent organization: Communication as its site and surface*. London: Erlbaum.

Tett, G. (2009). *Fool's gold : How the bold dream of a small tribe at J.P. Morgan was corrupted by Wall Street greed and unleashed a catastrophe*. New York: Free Press.

Tsoukas, H. (1991). The missing link: A transformational view of metaphors in organizational science. *Academy of Management Review, 16*(3), 566-585.

Tsoukas, H. (1993). Analogical reasoning and knowledge generation in organizational theory. *Organization Studies, 14*(3), 323-346.

Tsoukas, H., & Chia, R. (2002). On organizational becoming: Rethinking organizational change. *Organization Science, 13*(5), 567-582.

Tsoukas, H., & Vladimirou, E. (2001). What is organizational knowledge? *Journal of Management Studies*, *38*(7), 973-993.

Tucker, A. L., & Edmondson, A. C. (2003). Why hospitals don't learn from failures: Organizational and psychological dynamics that inhibit system change. *California Management Review, 45*(2), 55-72.

Wagner, K. D., Lorion, R. P., & Shipley, T. E. (1983). Insomnia and psychosocial crisis: Two studies of Erikson's developmental theory. *Journal of Consulting and Clinical Psychology*, *51*(4), 595-603.

Walker, M. R. (2005). A refined model of sleep and the time course of memory formation. *Behavioral and Brain Sciences*, *28*(1), 51-64.

Walsh, J. P., & Ungson, G. R. (1991). Organizational memory. *Academy of Management Review, 16*(1), 57-91.

Wamsley, E. J., Tucker, M., Payne, J. D., Benavides, J. A., & Stickgold, R. (2010). Dreaming of a learning task is associated with enhanced sleep-dependent memory consolidation. *Current Biology, 20*(9), 850-855.

Wee, L. (2005). Constructing the source: metaphor as a discourse strategy. *Discourse Studies, 7*(3), 363-384.

Weick, K. E. (1989). Theory construction as disciplined imagination. *Academy of Management Review, 14*(4), 516-531.

Weick, K. E. (2000). Emergent change as a universal in organizations. In M. Beer, & N. Nohria (Eds.), *Breaking the code of change* (pp. 223-242). Boston, MA: Harvard Business School Press.

Weick, K. E., & Roberts, K. H. (1993). Collective mind in organizations: Heedful interrelating on flight decks. *Administrative Science Quarterly, 38*(3), 357-381.

Williams, R. (2004). Management fashions and fads: understanding the role of consultants and managers in the evolution of ideas. *Management Decision*, *42*(6), 769-780.

Zisapel, N. (2007). Sleep and sleep disturbances: Biological basis and clinical implications. *Cellular and Molecular Life Sciences, 64*, 1174-1182.

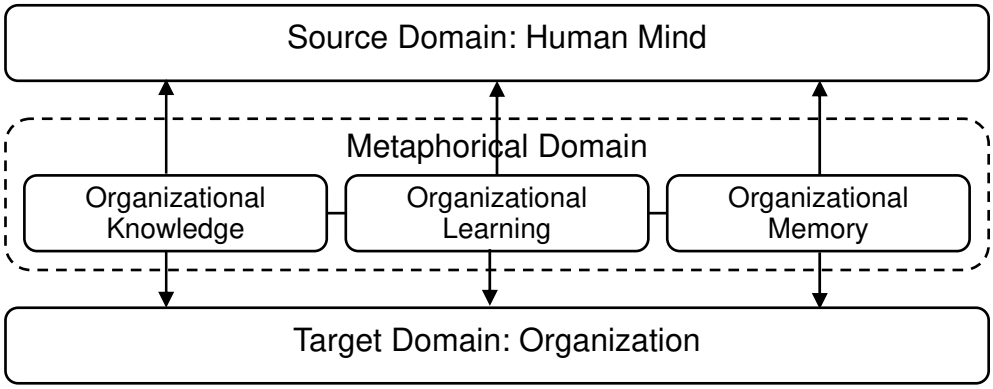

Figure 1: The double interdependence of metaphors

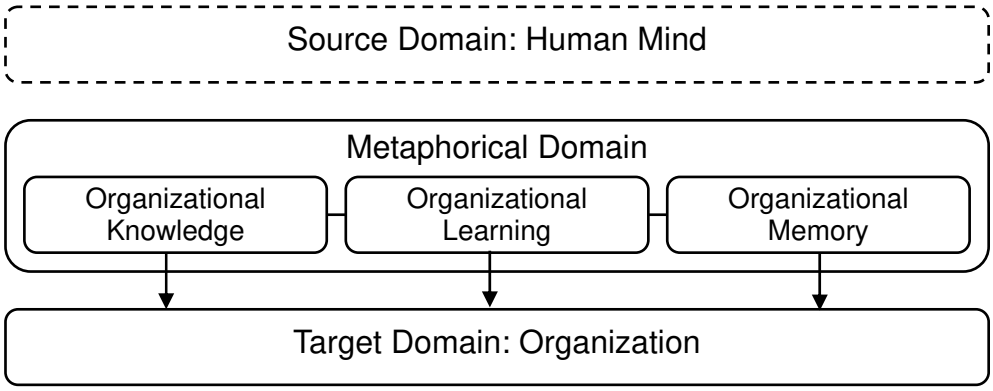

Figure 2: The figurative “death” of metaphors

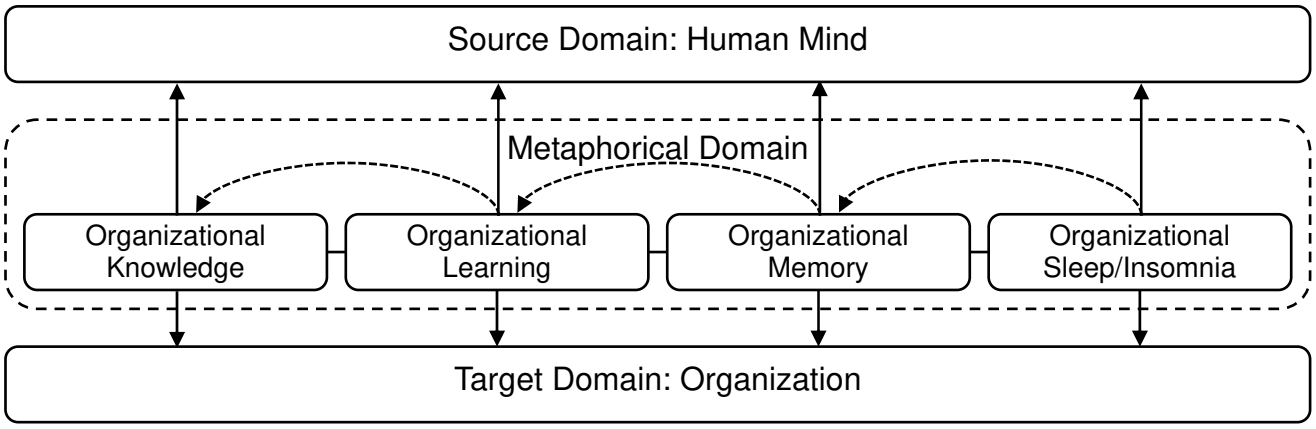

Figure 3: The recontextualization of metaphors

Table 1: The pathology of organizational insomnia: three clinical types

	Management fashions	**Endless reorganization**	**Always on**
Type of insomnia (primary/secondary)	Secondary	Secondary	Primary
Duration of insomnia	Transient/acute	Chronic	Chronic
Source of insomnia	Primarily exogenous	Interplay of endogenous and exogenous factors	Primarily endogenous
Harm to knowledge, learning, memory	Temporary, curable	Potentially harmful	Potentially harmful
Typical industries	Various industries prone to using consultants	Various industries prone to using consultants	Especially consulting, finance, healthcare
Research studies	Abrahamson & Fairchild, 1999; Kieser, 1997, Newell et al., 2001; Williams, 2004	Brown & Eisenhardt, 1997; Klarner & Raisch, forthcoming; Larson et al., 2011; Mayrhofer, 1997; McKinley & Scherer, 2000; Probst & Raisch, 2005; Weick, 2000	Farjoun & Starbuck, 2007; Schoeneborn, 2008; Tett, 2009; Tucker & Edmondson, 2003

Table 2: Evaluation of the organizational insomnia metaphor based on the "optimality principles" by Cornelissen (2006a)

Optimality principle	**Definition (Cornelissen, 2006a)**	**Evaluation**
Integration principle	That representations in the metaphorical blend can be manipulated as a single unit	Satisfied
Topology principle	That relations in the metaphorical blend should match the relations of their counterparts in other semantic domains	Satisfied
Web principle	That the representation in the metaphorical blend should maintain a relationship to the input target and source concepts	Satisfied
Unpacking principle	That, given a metaphorical blend, the interpreter should be able to infer the structure in relation to other subjects and applications	Satisfied
Good reason principle	That creates pressure to attribute significance to elements in the metaphorical blend	Satisfied
Metonymic tightening principle	That when metonymically related elements are projected into the metaphorical blend, there is pressure to compress the "distance" between them	Satisfied
Distance principle	That the target and source concepts need to come from semantically distant domains	Satisfied
Concreteness principle	That the source concept compared to the target is sufficiently concrete (rather than abstract) to be understood and manipulated	Partly satisfied